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## FEATURE ARTICLE

### *The Skinny On Fatty Acids*

Fat plays an important role in health. Your body needs fat in order to function properly. Fat is a major source of energy and contributes to the structure of cells. Fat is used to produce hormone-like compounds (prostaglandins) that regulate blood pressure, heart rate, blood vessel constriction, and blood clotting. Fat also transports fat-soluble vitamins (A, D, E, and K) from foods that you eat into your body.

#### Types of Fat

There are different types of fat— saturated fat, trans fat, monounsaturated fat, polyunsaturated fat and cholesterol. But not all fats are created equal.

**Saturated fat**—Saturated fat is often called “bad” fat. Saturated fat can increase your cholesterol level and your risk of heart disease. It is usually solid at room temperature and is often found in animal products such as red meat, poultry, butter and whole milk. Other foods high in saturated fat include coconut, palm, and other tropical oils.

**Trans fat**—Trans fat (also called trans-fatty acids) comes from adding hydrogen to vegetable oil through a process called hydrogenation. This

### *Caught In The Web*

**Parents and health professionals can report harmful effects or illness caused by foods or food additives to the FDA's MedWatch**

Two long-chain polyunsaturated fatty acids, docosahexanoic acid (DHA) and arachidonic (ARA), have recently been added to infant formula. As long as additives are generally recognized as safe (GRAS), the Food and Drug Administration (FDA) can give approval for their use. In an effort to ensure the safety of infants being fed formula containing DHA and ARA, the FDA and the formula industry must monitor infants for adverse events. Parents and health professionals are asked to report any harmful effects or illness to the FDA and the formula industry. Contact the FDA's MedWatch hotline at 1.800.332.1088 or register your complaint online.

Consumers are asked to contact:  
[www.fda.gov/medwatch/report/consumer/consumer.htm](http://www.fda.gov/medwatch/report/consumer/consumer.htm)

Health care providers are asked to contact:  
[www.fda.gov/medwatch/report/hcp.htm](http://www.fda.gov/medwatch/report/hcp.htm)

makes the fat more solid and less likely to spoil. Hydrogenated fat is a common ingredient in commercial baked goods

### Q. What is WIC?

WIC is a special supplemental nutrition program for women, infants, and children. WIC is administered by the United States Department of Agriculture (USDA) Food and Nutrition Service (FNS). There are 88 WIC state agencies in all 50 states, 33 Indian Tribal Organizations, America Samoa, District of Columbia, Guam, Puerto Rico, and the Virgin Islands. Services are administered through 2,200 local agencies and 9,000 clinics.

Eligible participants include pregnant or postpartum women, infants, and children up to age 5 who have an income at or below 185 percent of the U.S. Poverty Income Guidelines (currently \$33,485 for a family of four). Because WIC cannot serve all eligible people, a priority system guides the selection process. Top priority is given to pregnant women, breastfeeding women, and infants.

In 1974, when WIC began, 88,000 people participated at a cost of \$20.6 million. In 2002, 7.47 million people received WIC benefits each month—3.74 million were children, 1.93 million were infants, and 1.8 million were women at a cost of \$4.462 billion. Currently, 47 percent of the 4 million babies born in the United States participate in WIC.

If you would like additional information about WIC contact the USDA FNS at 1+ 703.305.2286 or visit [www.fns.usda.gov](http://www.fns.usda.gov)

such as crackers, cookies and cakes and in fried foods such as doughnuts and fried potatoes. Shortenings and some margarines are high in trans fat. Look for the words hydrogenated or partially hydrogenated in the list of ingredients to see if trans fat is included.

*Polyunsaturated fat*—Polyunsaturated fat is usually liquid at room temperature and in the refrigerator. Polyunsaturated fat can lower blood cholesterol levels. In addition, it may reduce ar-

terial deposits. Foods high in polyunsaturated fats include vegetable oils such as safflower, corn, sunflower, soy and cottonseed oils. One type of polyunsaturated fat, long-chain polyunsaturated fatty acids (LC-PUFAs), appear to decrease the risk of heart attack, protect against irregular heartbeats and lower blood pressure levels. It may even protect against some cancers. LC-PUFAs (also called Omega-3 fatty acids) are found mainly in fish, particularly in fatty, cold-water fish, such as salmon, mackerel and herring. Lesser amounts are in flaxseed, soybean and canola oil.

*Monounsaturated fat*—Monounsaturated fat can lower the risk of heart disease by reducing blood cholesterol levels. Unlike polyunsaturated fat, monounsaturated fat is more resistant to oxidation, a process that leads to cell and tissue damage. Monounsaturated fat is usually liquid at room temperature but may start to solidify in the refrigerator. Foods high in monounsaturated fat include olive, peanut and canola oils. Avocados and most nuts also have high amounts of monounsaturated fat.

*Cholesterol*—Cholesterol plays an important role in cell function. But it also contributes to fatty deposits (plaques) in arteries. Plaques can reduce blood flow and increase the risk of heart attack and stroke. Foods high in cholesterol include meat, poultry, seafood, eggs, dairy products, lard, and butter.

## Human Milk Fats

Human milk contains more than 200 components including fat, carbohydrate, and protein. About 40-50 percent of the total calories in human milk come from fat. The total fat content of human milk can vary from less than 20 grams/liter to more than 50 grams/liter. Fat content also varies from the beginning to the end of a feeding, from morning to night, and from day to day throughout the period of lactation. Triglycerides account for 98 percent of the total fat content in human milk. Triglycerides contain mostly saturated and monounsaturated fatty acids and a small amount of polyunsaturated fatty acids.

## Fatty Acid Facts

- Most fatty acids are made in the body, with the exception of linoleic acid (LA) and alpha-linolenic acid (ALA).
- LA and ALA acids are called essential fatty acids because they must be obtained from dietary sources.
- Essential fatty acids are used by the body to make long-chain polyunsaturated fatty acids.
- Arachidonic acid (ARA) is made from linoleic acid and docosahexaenoic acid (DHA) is made from alpha-linolenic acid.

DHA and ARA have been linked to improved cognitive function and visual development. As a result, fatty acid supplements have been added to infant formulas in Europe, Asia, and South America for more than 10 years. Only recently have preformed LC-PUFAs been added to infant formulas in the U.S. This action followed a decision by the U.S. Food and Drug Administration (FDA) to classify DHA and ARA supplements as GRAS (generally recognized as safe). Parents and health professionals have been advised to

## Did You Know?

### Scientists use human milk to study environmental chemicals

According to the U.S. Breastfeeding Committee, "scientists have found that studying environmental chemicals in the milk of women who are breastfeeding is the most economical and non-invasive way to monitor environmental chemical levels in the general population in the United States. These chemicals are stored in the human body in fat, and human milk contains significant levels of fat. Therefore, using milk samples is a simple, convenient way to monitor the level of environmental chemical in the general population. Measuring chemical levels in fat depots in the general population would require drawing blood or taking a fat biopsy, a surgical procedure that is both invasive and expensive."

"We can expect to hear about more environmental chemicals being found in human milk, only because human milk has been selected as the human tissue best suited for monitoring the presence of and levels of chemicals in the general population. At the same time, all of the scientists currently monitoring the chemicals found in human milk agree with the long-held conviction of the medical community that human milk is the optimal and safest food for human infants both nutritionally and immunologically. Despite elevated levels of environmental chemicals in human milk, women should still be encouraged to breastfeed." To see a copy of the entire press release please visit [www.usbreastfeeding.org](http://www.usbreastfeeding.org)

monitor infants receiving enriched formulas and to report any adverse reactions to the FDA and the infant formula manufacturer (see Caught in the Web). DHA and ARA in capsule form are also

## *It's the Law*

### **Student Nurses Support Breastfeeding Legislation**

The Georgia Association of Nursing Students (GANS) passed a resolution that encourages state legislators to approve bills that promote, protect, and support a woman's choice to breastfeed. The resolution will be submitted by GANS to the National Student Nurses Association during its annual convention to be held in 2004.

Copies of the resolution have been sent to health professional organizations and government officials. Congratulations to Emile R. Crosa, Legislative Director of the Emory University Student Nurse Association and author of the bill.

### **Education on professional ethics required**

Effective 2007 individuals seeking certification by the International Board of Lactation Consultant Examiners (IBLCE) will be required to have a minimum of five continuing education recognition points (CERPS) that address professional ethics. The IBLCE recognizes the importance of professional ethics particularly among individuals striving to establish a new profession. In an effort to satisfy the requirement, individuals can complete independent study modules, attend conference sessions, or submit examination questions that focus on professional ethics. For additional information contact a member of the IBLCE staff at 1+ 703.560.7330 or [iblce@iblce.org](mailto:iblce@iblce.org)

being marketed to breastfeeding women as a way to increase the level of fatty acids in their breastmilk.

### **Are Fatty Acid Supplements Necessary?**

#### **What We Know**

- Human milk contains all the nutrients a baby needs including DHA and ARA.
- Human milk is superior to infant formulas even those supplemented with DHA/ARA.
- There is no evidence that breastfed babies are at risk for fatty acid deficiency.
- If an infant has inadequate stores or is unable to synthesize LC-PUFAs then DHA/ARA supplements may be conditionally essential.
- Preterm infants may benefit from receiving supplements of preformed LC-PUFAs.
- Fatty acid supplemented formulas are more costly.
- There is no evidence that fatty acid supplemented formulas cause adverse effects.

#### **What We Don't Know**

- Do supplements alter the ratio of essential fatty acids (LA and ALA) and cause imbalances in the level of long-chain polyunsaturated fatty acids (DHA and ARA)?
- Do excess DHA and ARA interfere with the synthesis of other fatty acids?
- Do fatty acid supplements offer any long-term benefits?

If you would like to learn more about the controversy surrounding the use of fatty acid supplements, contact the University of California Davis Human Lactation Center for information about

their independent study module (see What's New?) 1+ 503.754.5364 or [lactation.ucdavis.edu/isms.htm](http://lactation.ucdavis.edu/isms.htm)

## SCIENCE OR SCIENCE FICTION

### **Maternal morbidity an indicator of maternal health**

Approximately 4 million women give birth in the United States each year. Until recently, the only indicator of maternal health was maternal mortality (death). But the Healthy People 2010 objectives now include a new maternal health indicator, maternal morbidity during labor and birth. In an effort to assess maternal morbidity, a team of researchers from the Centers for Disease Control and Prevention analyzed data obtained from the National Hospital Discharge Survey (NHDS) during the years 1993-1997. The NHDS selects approximately 200,000 inpatient records each year from among 400 hospitals. Information taken from each record is weighted to reflect all hospitals nationally.

Maternal morbidity was defined as "a condition that adversely affects a woman's physical health during childbirth beyond what would be expected in a normal delivery." A total of 19,081,038 vaginal and cesarean births were analyzed. Nearly 1.7 million women annually or 43% of the women who gave birth each year had some form of maternal morbidity (obstetric complication or preexisting condition). The most common obstetric complications were third and fourth degree lacerations (5%). The most com-

mon preexisting medical condition was chronic hypertension (1.5%). .

Although the prevalence of a single type of morbidity is low, the combined total for all types is quite high. If Healthy People 2010 objectives are to be achieved, national, state, and local policies must address women's needs during pregnancy and gaps in prevention programs.

Am J Public Health 93(4):631-634, 2003

## WHAT'S NEW

### **Hot Off The Press: The Role of Long-chain Fatty Acids in Infant Health: Helping Families Make Informed Decisions about DHA**

Earn 3 contact hours while you explore the issues surrounding the use of docosahexanoic acid (DHA) and arachidonic acid (ARA) supplements. This Independent Study Module (ISM) was developed by Jennifer Follet, Kara Ishii, and Jane Heinig from the Human Lactation Center at the University of California Davis. It contains a detailed discussion of the structure and physiology of long-chain polyunsaturated fatty acids, a critical review of the current evidence regarding the safety and efficacy of DHA and ARA supplements, and counseling tips to guide health professionals.

It is truly an outstanding resource! To order your copy, simply visit [lactation.ucdavis.edu/isms.htm](http://lactation.ucdavis.edu/isms.htm)

Amy Spangler is pleased to present the newsletter, Feeding Times. Published six times a year, Feeding Times gives our readers timely information regarding health care practice and policy. Each issue contains valuable information on items of interest to parents and professionals. If you would like to be removed from the subscription list please contact [akspangler@mindspring.com](mailto:akspangler@mindspring.com) with REMOVE in the subject line. For additional information about our products and services please visit our website at [www.daddymommyandme.com](http://www.daddymommyandme.com)

## EDUCATIONAL EVENTS

\*An asterisk indicates those events where Amy Spangler will be speaking.

November 8-9, 2003  
ILCA Regional Conference  
Clinical Practice and Reimbursement  
Hyatt Regency  
Denver, Colorado USA 1+919.787.5181  
[www.ilca.org](http://www.ilca.org)

November 11, 2003\*  
Mercy Medical Center  
Family Birth Center  
Sioux City, IA USA  
Susan Brewster 1+712.279.2152

December 8, 2003  
Institute of Medicine  
Keck Center of the National Academies  
Washington, D.C. USA  
Shannon Ruddy [sruddy@nas.edu](mailto:sruddy@nas.edu)

January 23-24, 2004  
U.S. Breastfeeding Committee  
Washington Hilton and Towers  
Washington, D.C. USA  
[www.usbreastfeeding.org](http://www.usbreastfeeding.org)

January 29-30, 2004\*  
Alabama WIC Conference  
Montgomery, AL USA  
Michelle Grainger 1+334.206.2921

## PROFESSIONAL OPPORTUNITIES

Are you looking for a new employee, or new job opportunity? Use our Professional Opportunities column to streamline your search. Your advertisement will be read by hundreds of qualified professionals in the maternal and child health field and by more than 10,000 visitors during its 60 day flight. For additional information, contact us at [info@amysbabycompany.com](mailto:info@amysbabycompany.com)

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